

# Quality of Life in Some Asthmatic Children Treated with Homeopathic Remedies and their Parents

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#### Abstract

**Introduction:** After treating a group of children with asthma using the individualized homeopathic prescriptions technique, this study examined the relationship between parental and child reports of quality of life and described the relationship of clinical asthma severity including respiratory tests on their quality of life.

**Method:** Thirty children with asthma were treated by homeopathic medicines, for a period of 6 months. Parent and child quality of life measurements were obtained pre and post intervention using Juniper's Paediatric Caregivers Quality of Life (PACQLQ) and Juniper's Paediatric Quality of Life Questionnaires (PAQLQ). Asthma severity was measured using criteria from the current clinical practice guidelines of the National Heart, Lung, and Blood Institute (NHLBI)and the Global Initiative for Asthma (GINA).

**Results:** There was a significant improvement in parental and children total and subscale quality of life scores at follow up. Mean parental total quality of life scores were correlated at follow-up with their children asthma severity. For all children, emotional quality of life was significantly associated with asthma severity. Parent's emotional quality of life and activity quality of life were significantly associated with children's asthma severity (p=0.0001). No significant correlation was found between respiratory tests results and quality of life of children and their parents.

**Conclusion:** Homeopathic medicines, in the classical way of prescription, proved to be effective in amelioration of quality of life in children and their parents.

**Keywords:** Homeopathy; Childhood bronchial asthma; Homeopathic medicines; Spirometry; quality of life; Observational study

#### Introduction

Although asthma cannot be cured, appropriate management can control the disease and enable people to enjoy a good quality of life [1]. Quality of life is defined by the individual and depends on many factors such as lifestyle, past experiences, hopes for the future, dreams and ambitions [2]. Quality of life for a child with asthma has been defined as the measure of emotions, asthma severity/symptoms, emergency department visits, missed school days, activity limitations and visits to the emergency department [3]. Several studies of children with asthma have indicated that the child's quality of life reports may differ from those of their parents [4,5].

Regardless of the definition of quality of life, most studies indicate that children with asthma and their families experience significant decreases in quality of life. Handelman et al. [6] reported that 25% of children with asthma and 76% of mothers of children with asthma feared mortality due to asthma. Asthma not only increases school absenteeism and fears, but it also decreases physical activity for children with asthma. Glazebrook et al. [7] reported that two-thirds of children with asthma stated that asthma stopped them from doing sports and limited their activity based on reports of an average of two fewer activities per day than children without asthma, (4 activities per day *vs* 6 activities per day). For parents of children with asthma a decreased quality of life is related to missed workdays, limited activities, inadequate sleep, frequent night awakenings and decreased emotional health. In addition, several studies have also indicated a negative relationship between symptom frequency and parental quality of life scores [8,9].

An assessment of the impairment domain for determining the severity of disease (in patients on no long-term-control treatment before treatment is initiated) or the level of control (after treatment is selected) usually can be elicited by careful, directed history and lung function measurement. Standardized questionnaires like the Asthma Control Questionnaire and others have been developed to facilitate and standardize the assessment of the impairment domain of asthma control [10].

The literature on clinical research in allergic conditions treated with homeopathy includes a meta-analysis of randomized controlled trials (RCT) for hay fever with positive conclusions and two positive RCTs in asthma. Cohort surveys using validated Quality of Life questionnaires have shown improvement in asthma in children, general allergic conditions and skin diseases. Economic surveys have shown positive results in eczema, allergy, seasonal allergic rhinitis, asthma, food allergy and chronic allergic rhinitis. For asthma patients, Arsenicumiodatum appeared one of the most effective remedies, followed by Lachesis, Calcareaarsenicosa, Carbovegetabilis and Silicea [11].

To evaluate individualized homeopathy as an adjunct treatment for bronchial asthma in children, an observational longitudinal study was conducted in 30 Egyptian children aged 7-17 years. The main outcome measures were frequency of attacks, use of medication, night awakening, spirometry and life style questionnaires for parents and children at baseline and at follow-up till 6 months. There were clinically relevant and statistically significant changes in those measuring severity, indicating relative improvements after 3 months and absolute improvements after 6 months of treatment by homeopathic medicines [12]. The previous study did not discuss the changes in children and parental quality of life scores in relation to asthma severity and pulmonary functions tests.

The purpose of this article is to examine the relationship between child and parental quality of life and to describe the relationship among several factors such as demographic variables, asthma severity, and quality of life in children with asthma and their parents/ caregivers. Data on quality of life were collected as part of a larger study funded by the National Research Centre.

## Methods

### Overview of the study

Forty two children with asthma and their families were enrolled into this study. Quality of life data were available for 30 children and their parents as 12 families did not complete the follow-up surveys [12]. The children were referred from the pulmonologist at a chest clinic.

To be eligible for the study, children age had to be from 7 to 17 years at the time of recruitment, have an asthma diagnosis from the pulmonologist, take asthma medication, and have at least one of the following symptoms in the past 6 months: wheezing, shortness of breath, night time cough, and day time cough, wheezing with exercise or colds. Children whose parents reported that they were developmentally delayed were excluded due to the need for the child to understand questions.

Baseline and follow-up telephone surveys of the parents/caregivers were used to assess demographics variables, asthma symptoms, and quality of life reports.Baseline and follow-up, face –to- face interviews of the children were conducted in the clinic by pediatricians to assess their quality of life. The pediatrician read the questions so that the child could fill in their response. Children independently completed their own responses on the quality of life instrument. The follow-up surveys for parents and children were administered approximately 6 months after the baseline survey. The child's quality of life was the primary outcome variable of the study.

#### Homeopathic prescriptions

Individualized homeopathy was provided by two trained classical homeopaths. Patients attended up to six homeopathic consultations over the course of 6 months, plus extra telephone consultations as necessary, according to normal practice. Repertorization was done twice, one manually (using Murphy's Homeopathic Medical Repertory) and Radar Homeopathic Software to ensure a uniform homeopathic management. To ensure reasonable uniformity of practice, the homeopaths held case conferences weekly. The Medicines were supplied by Helios homeopathic pharmacy (Tunbridge Wells, UK) in pellets. They were dispensed to mothers in solution form, prepared by the homeopath themselves at the department. Mothers were informed about handling of bottles and dosage and also were instructed to report any reactions after starting treatment.

## Quality of life instruments

Juniper's Paediatric Asthma Quality of Life Questionnaire (PAQLQ) [13] was used to measure child quality of life and was administered to all child participants' pre and post intervention by a pediatrician. This tool consists of 23 items that measure the emotional quality of life (8 items), activity quality of life (5 items) and symptom quality of life (10 items) of children with asthma aged 7-17 years. All items were equally weighed. Responses were scored on a 7 point likert scale with a score of 1 indicating maximum impairment or poor quality of life and 7 indicating no impairment or good quality of life. The responses from all three domains (emotional, activity and symptom) were totaled respectively and then combined for an overall child quality of life score. The intra class correlation coefficients for children ages 7 to 10 were 0.89 for overall quality of life, 0.68, 0.83 and 0.87 respectively for the subscales- emotional, activity, symptom [13].

To measure caregiver quality of life the Juniper's Pediatric Caregiver Quality of Life Questionnaire (PACQLQ) (14) was administered to all parents' pre and post intervention. This tool consists of 13 items measured on a 7 point likert scale. Lower scores indicated impaired or poor quality of life. This tool, unlike the child quality of life tool, only contained activity and emotional quality of life domains, which when combined comprised the parent/caregiver's total quality of life score. The intra class correlation coefficients for the total PACQLQ score, the emotional and the activity domains were 0.80 to 0.85 [14].

## **Demographic variables**

Demographic variables including parental/caregiver data were recorded at baseline including: age, sex, education and monthly income. Children's age, gender, weight, height, pediatric and parental quality of life scores were ascertained at baseline and follow- up using surveys administered to the parents/caregivers. Demographic variables were presented in a previous article [12].

#### Asthma severity

Several items were used to assess the frequency of the child's daytime and nighttime asthma symptoms in the past 6 months. Asthma severity questions asked about symptom frequency including cough, wheeze, and shortness of breath and chest tightness. Using parent reported symptom data and the National Asthma Education and Prevention Program (GINA) guidelines [15], children were categorized into one of the following four categories of asthma severity: mild intermittent, mild persistent, moderate persistent and severe persistent.

#### Data analysis

Outcome measures were total and subscale quality of life (TQOL, AQOL and EQOL) scores were calculated for each caregiver and child. Frequency distributions for all variables were examined across parent

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and child intervention and control groups. Pearson correlation coefficients were calculated to compare caregiver/parent and child total and subscale quality of life scores. Mean scores on the total and subscale measures were compared by asthma severity level using the student's t test. Statistical significance was accepted as p<0.05. All analyses utilized STATA statistical software vs. 7.0 and vs. 2.0.1 [16].

## Results

## Children and parent demographics

Most children were males (n=21, 70%) with a mean age of 10.0 years  $\pm$  2.3. Most caregivers were mothers (n=28, 93.3%), their mean age was 27.8 years  $\pm$  6.4 [12]. All mothers were housewives and almost illiterate or had less than 6years of education. They were all poor families with variable incomes. There were no significant relationship between any of the demographic variables and the quality of life scores of the children or parents/caregivers (data not showed).

## Quality of life questionnaires

• Comparison of quality of life scores between parents and children (Tables 1 and 2).

Variables	Range	Mean ± SD entry	Range	Mean ± SD exit	P-value	
PAQOLO						
Symptoms	1.2-5.50	3.11 ± 1.13	5.00-7.00	6.37 ± 0.75	0.0001	
Emotional Function	1.38-6.00	3.36 ± 1.08	5.00-7.00	6.43 ± 0.77	0.0001	
Activity limitations	1.20-6.00	4.04 ± 1.07	5.00-7.00	6.41 ± 0.76	0.0001	
Total life style	3.78-17.50	10.51 ± 2.77	15.00-21.0 0	19.21 ± 2.23	0.0001	
CGOLO						
Emotional Function	1.33-4.22	2.59 ± 0.89	5.00-7.00	6.35 ± 0.78	0.0001	
Activity limitations	1.00-5.00	2.64 ± 1.26	5.00-7.00	6.34 ± 0.78	0.0001	
Total life style	2.33-9.22	5.23 ± 2.02	10.00-14.0 0	12.71 ± 1.56	0.0001	
Delta change child Delta care change giver						
Symptoms change	0.00-5.70	3.27 ± 1.2	-	-	-	
Emotional Function	-0.75-5.63	3.07 ± 1.23	1.22-5.67	3.76 ± 1.15	0.0001	
Activity limitations	0.60-4.20	2.37 ± 1.15	1.00-6.00	3.72 ± 1.50	0.0001	
Total life style	-1.35-13.23	8.70 ± 3.14	2.47-11.33	7.84 ± 2.54	0.0001	

**Table 1:** Changes in total and subscale scores in the PAQLQ and PACQLQ. t- test for dependent variables

Variables	N	%
Symptoms	29	96.7
Emotional function	29	96.7
Activity limitations	27	90
Emotional function care giver	30	100
Activity function care giver	30	100

 Table 2: Percent improvement of subscales in children and parents

 \care givers. Improvement indicate changes by 0.5

Children and parental scores before and after intervention are shown in Table 1. Total and sub scale scores in both questionnaires showed significant improvement after 6 month of homeopathic treatment (p=0.0001). The percent improvement is shown in figure 1. After 6 months of treatment, all parents showed improvement in both quality of life domains while in children activity showed 90% improvement, while symptoms and emotional function showed 96.7% improvement.

At the beginning of study, activity limitation domain was weakly correlated with symptom and emotional domains (r=0.46 and 0.42) (Table 2) in children. At the end of study, all 3 domains were highly correlated.

• Children's respiratory functions tests and quality of life scores

Although pulmonary functions tests did show significant improvement after 6months (12), yet no significant correlation was found with total and sub scale scores (data not presented).

• Asthma severity and quality of life scores Tables 3, 4 and Figures 1 and 2

Variables	Symptoms		Emotional function		Activity limitations	
	r	p-value	r	p-value	r	p-value
At the beginning of the study						
Symptoms			0.82	0.0001	0.46	0.01
Emotional function	0.82	0.0001			0.42	0.02
Activity limitations	0.46	0.01	0.42	0.02		
At the end of the study						
Symptoms			0.97	0.0001	0.91	0.0001
Emotional function	0.97	0.0001			0.93	0.0001
Activity limitations	0.91	0.0001	0.93	0.0001		

**Table 3:** Intercorrelation between subscale scores in the PAQLQ at the beginning and at the end of the study

Children were categorized as mild intermittent (38.9%), mild persistent (38.5%), moderate persistent (11.7%) and severe persistent asthma (10.9%). At baseline, there was no statistically significant

relation between the child's asthma severity and parent or child quality of life scores. At follow up, a statistically significant relationship was found between the child's asthma severity level and the parents/ caregivers Emotional sub scale (p=0.009) (Figure 1) and the parent/ caregiver Activity subscale (p=0.03) (Figure 2).

PAQLQ	Total score of symptoms				
	r	p-value			
At the beginning of the study					
Symptoms	-0.52	0.003			
Emotional function	-0.45	0.01			
Activity limitation	-0.28	0.13			
At the end of the study					
Symptoms	-0.51	0.004			
Emotional function	-0.50	0.004			
Activity limitations	-0.56	0.001			

**Table 4:** Correlation between asthma severity score and PAQLQ at the beginning and at the end of the study





There was a trend toward a statistically significant relationship between asthma severity and the child's Emotional subscale (p=0.08), but no significant relationship between asthma severity and the child's Activity subscale (p=0.51) (Table 5).





Variables	Mild intermittent Mean ± SD N=11 (Group I)	Mild Persistent Mean ± SD N=17 (Group II)	Moderate Persistent Mean ± SD N=2 (Group III)	p-value
Emotional care giver at the end	6.7 0.5	6.2 0.9	5.1 0.2	0.09
Activity care giver at the end	6.7 0.7	6.3 0.8	5.1 0.2	0.04 1 <i>vs</i> 3

**Table 5:** Comparison between asthma severity and PACQLQ. One wayANOVA

## Homeopathic Remedies

The most common single polychrest medicines (n = 17) used were: Arsenicum album, Barytacarbonica, Calcareacarbonica, Calcareaphosphorica, Cuprum metallicum, Hyoscyamusniger, Lachesismutus, Lycopodiumclavatum, Mercuriussolubilus, Natriummuriaticum, Natriumsulphuricum, Phosphorus, Pulsatillapratensis, Silicea terra, Sulphur, Thujaoccidentalis, and Tuberculinumbovinum, allin 200C potency.

Ascending potencies were prescribed in acute attacks in Hahnemannian scale up to 30C in daily doses. Higher potencies (200C) were used between attacks in single doses. No aggravations of symptoms were reported.

Patients reduced ICS from about 1 month after stopping short acting inhalers spontaneously due to disappearance of symptoms following the protocol of Colin.There was a modest but statistically significant withdrawal of conventional treatment comparing first and last consultations. Citation: Farid Shafei H, Soha Mahmoud AD, Saber MM, Dawoud EM, Nagwa Hassan M (2014) Quality of Life in Some Asthmatic Children Treated with Homeopathic Remedies and their Parents. J Homeop Ayurv Med 3: 159. doi:10.4172/2167-1206.1000159

#### Discussion

An optimal quality of life for individuals may be defined as the ability to perform normal daily functions in the presence or absence of symptoms. A critical aspect in the management of allergic diseases is their impact on subjective experience. Quality of life appears to be a distinct component of asthma health status, along with night time symptoms, daytime symptoms, and SABA use [17].

At the beginning of the study, children and parents reported an impaired life style scores in all domains as reported in previous studies [18,19].

The burden of the disease, besides functional and practical problems, includes some emotional aspects: the presence of a chronic condition, the need to take medication and change habits and lifestyle may cause anxiety, tension and irritability and an unsatisfactory social life. Quality of life and patient-reported symptoms have been extensively evaluated in asthma and rhinitis [20,21]. These studies support our findings in this work: Emotional domain was significantly correlated with the Symptom domain all over the study. Children had a higher emotional quality of life at follow up which may be due to school attendance, a significant component of the child's life, and that school may be the critical socialization site for those poor children. Moreover, this need for socialization may indicate that school is the ideal location to deliver asthma education to children. These results support previous research investigating the impact of asthma on the emotional health of children and adolescents. Okelo et al. [22] noted that poor asthma specific emotional quality of life was significantly associated with increased missed school days (p<.05). Blackman and Gurka [23] noted that children with asthma have higher rates of depression and other behavioral disorders.

Clinical asthma status parameters were found to be moderately correlated with quality-of-life measures in children (0.51, 0.50 and 0.56). These findings agree with the EPR-3(10) statement and Biairdini study [20] that correlations between symptoms and quality of life are often in the weak-moderate range, while correlations with pulmonary function measures are quite weak. In our study, no relation was found between respiratory functions tests and quality of life scores.

Parental quality of life measurements were positively correlated with their child's asthma at the end of the study (p=0.0001). Asthma severity was the most influential factor in their overall quality of life perception as well as in their activity and emotional domain quality of life measurements. Parents overall had more positively quality of life scores than the children. Chen et al. [24] found that distressed children might show bias toward negative aspects of an event by excluding positive or neutral aspects. For example, a child experiencing one asthma attack in the last week may be more likely to say he or she was extremely bothered by asthma symptoms while forgetting that they may have had some less severe symptom days after treatments with a steroid. The trauma of the initial event may diminish any positive aspects that follow. Children with asthma also may not share their parent's views about their illness [25]. Children living with asthma are experiencing their symptoms first hand versus parents or practitioners who only witness or hear about the symptoms. Children are the experts on their own feelings, activity limitations and symptoms. School age children, in particular, do not necessarily share each asthma event with their parents. They may omit reporting coughing simply because they forget or possibly, because they do not want to be excluded from these events.

### Conclusion

These observations suggest that homeopathy, can ameliorate children quality of life, long before symptoms improvement and amelioration of pulmonary functions tests.

Gaining control of the child's asthma severity is an essential component of improving parental quality of life and experiences of patients must be accessed directly and not imputed from measures of clinical status.

Also, there is a need to develop clinical trials in which quality of life scores are the primary or co-primary outcome. Another point is the necessity to assess patients' viewpoint with a rigorous methodological procedure (use of validated tools, correct administration of the questionnaires and report of complete results).

#### Limitations

Parents and children in this study had difficulties in recalling several items because there was a 6 month time period between the first and the second questionnaire.

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